quick current often trespasses upon a slower moving one, a fact which is manifested by wispy shadings and spots protruding considerably into an adjacent current. Such an intrusion of matter might have occurred in the region of the S.S. temperate belt, and by continuing its northerly course slowly but interruptedly, its rapid westerly drift combined would cause it to drift in a W.N.W. direction. The result would be for the matter to form a slanting streak across the disc, and it is possible, and not improbable, that the oblique belt under discussion has found its origin through a similar cause.

Tests for Colour-vision.

AN article in NATURE for August 18 deals aptly with the question of testing for colour-vision. It is to be hoped that the committee at present inquiring into the matter will advocate that testing should be carried out in future in conditions resembling as nearly as possible those on which seamen ordinarily follow their calling. It does not seem quite practical or fair to test indoors a man's ability to pick up lights in the open. The conditions of light inside and outside vary so much, as do those of inside and outside darkness. A sailor's business is not to match colours, but to pick up and distinguish instantly lights that may be seen, far or near, through varying conditions of atmosphere.

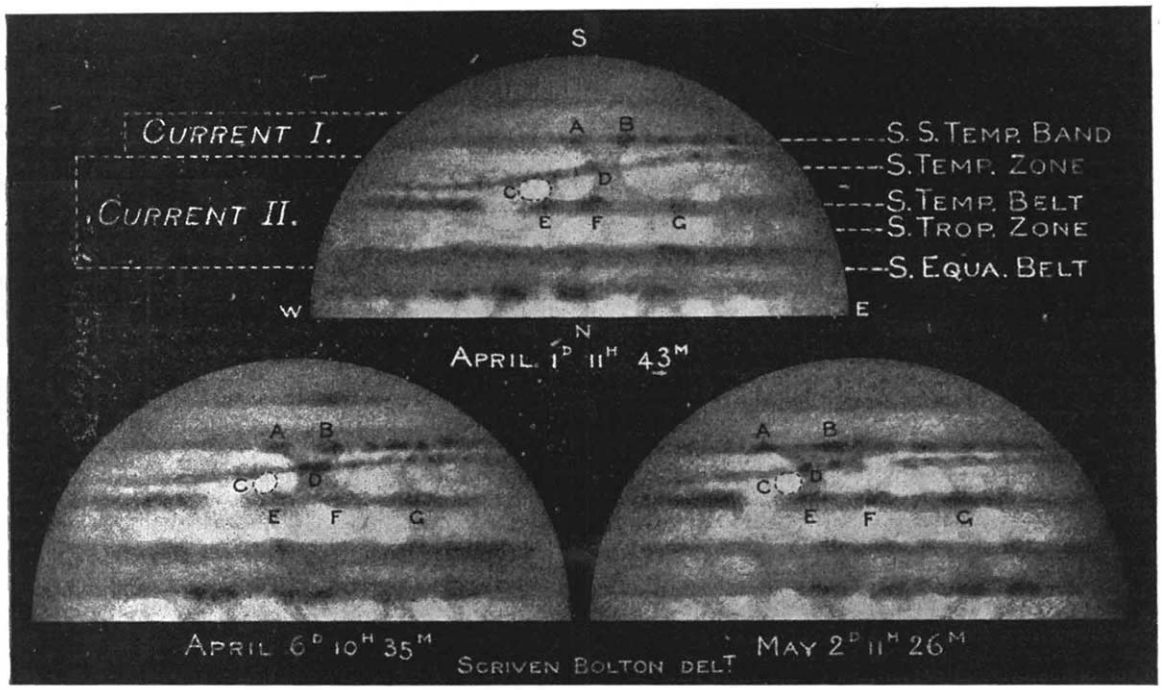
The sight of the average seaman, from practice, is probably much keener than that of the average landsman. The sailor's eyes are trained to adapt themselves to varying conditions of outside darkness.

The suggestion of spectrum tests is good, provided that such testing is made supplementary only to the practical open-air tests with flags by day and sidelights by night. The object of the tests is to ascertain the candidate's faculty for instant recognition of a flag or light, and there is no difficulty whatever in providing efficient practical tests. It is unnecessary, and even mischievous, to try to puzzle a candidate with combinations of lights and shades such as never occur in the course of his practical work.

It is to be hoped that the committee which is investigating the matter will allow common sense and practical ability to rule its recommendations for future examinations.

D. WILSON-BARKER.

The Thames Nautical Training College, H.M.S. *Worcester*, Greenhithe, September 19.



An Oblique Belt in Jupiter, 1910.

The movements of the seven spots lettered in the drawings are tabulated as under :—

Name of spot	First and last date of observation	Average monthly drift (3 days) [1]	Rotation period	
		°	h. m. s	
A	1910, Feb. 9 / 1910, May 7	+28·5	9 55 2·8	Current I.
B	1910, April 1 / 1910, May 7	+31·0	9 54 59·5	Current I.
D	1910, April 1 / 1910, May 7	+28·5	9 55 2·8	Current I.
C	1910, Jan. 16 / 1910, April 23	+17·0	9 55 18·1	Current II.
E	1910, March 5 / 1910, April 23	+15·8	9 55 19·7	Current II.
F	1909, Dec. 13 / 1910, April 23	+14·3	9 55 21·7	Current II.
G	1909, Dec. 30 / 1910, April 1	+17·5	9 55 17·4	Current II.

The oblique belt was situated on the opposite side of the planet to the red spot, and the longitudes of the condensation D might be given here :—

1910		1910	
April 1	169°·2	April 23	146°·9
,, 6	161·6	May 2	140·2
,, 8	156·1	,, 7	133·4

Leeds, September 3. SCRIVEN BOLTON.

[1] Relatively to the adopted zero meridian of System II., based on a rotation period of 9h. 55m. 40·6s. (*Nautical Almanac*).

Fireball of September 2.

THE remark in NATURE of September 8 (p. 318), as to the necessity of further observations for determining the height and velocity of meteors encourages me to send the following note :—

At 9.5 p.m. on September 2, from Earlstone Common, four miles south of Newbury, I had a good view of the meteor described by the Rev. J. C W. Herschel as seen

from near Wellington College. I have seen brighter meteors, but never one that remained so long in sight, and its course was marked for a long way by a streak of light, showing very clearly the route it had taken. When I first caught sight of it, it appeared to be rising in the sky, through the Camelopard, and it passed almost exactly over β and γ of the Little Bear, over η Draconis, between π and ρ Herculis, and over α Ophiuchi, vanishing perhaps 15 degrees further south in the Serpent. Rising and falling in its flight like a thrown cricket-ball, it seemed to be quite close at hand.

EDMUND J. WEBB.

Burghclere, Newbury, September 9.

MR. EDMUND J. WEBB'S highly interesting account of the fireball of September 2, in conjunction with other descriptions which have now come to hand, enable the real path to be well determined.

The radiant point of the meteor was near β Aurigæ, or at about $87°+41°$, and the height of the object from about 98 to 44 miles from over the North Sea to S.S.W. coast of England. The meteor had an unusually long flight right across the country from N.N.E. to S.S.W., and its visible course of 352 miles was probably traversed at a velocity of 40 miles per second. It is only rarely that a fireball is seen in this country with such an extended trajectory. Most of the observers only saw a part of the path. The radiant was near the horizon in N.N.E.

The fireball was seen by the Rev. F. C. Lees, Sutton, Surrey; Rev. C. L. Tweedale, Otley, Yorks; Col. E. E. Markwick, Boscombe, Hants; and many other observers.

W. F. DENNING.

The Law of Definite Proportions.

PERHAPS a reader of NATURE will be good enough to solve the following question.

If an amount of heat is supplied to a volume of ice, water, and vapour *at* the triple point, and *remaining at* the triple point, and the same volume, while the heat is being supplied, are water and vapour formed in definite relative proportions from the ice? That is, is the ratio of vapour to water independent of the amount of heat supplied, or of the original proportions of the three phases?

C. E.

King Edward VII. School, Sheffield.

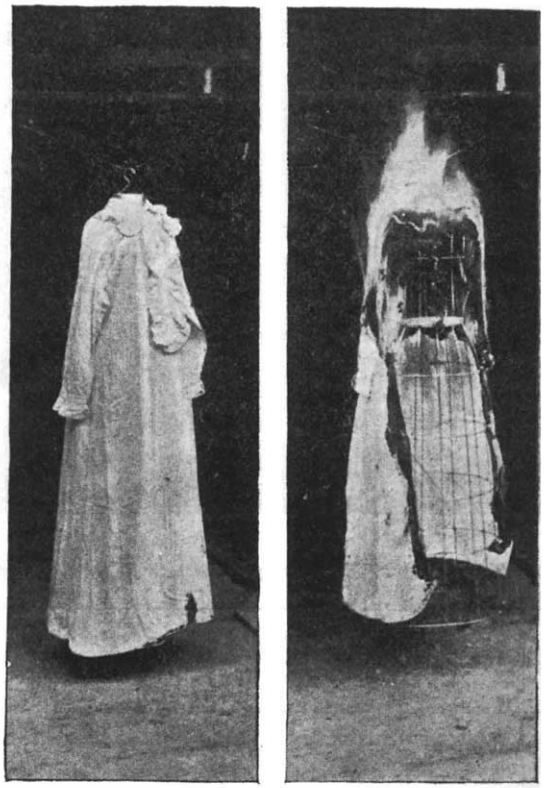
FIRE TESTS WITH TEXTILES.[1]

THE frequent accidents caused by the ignition of highly inflammable wearing apparel have directed wide attention to the possibility, by suitable treatment, of rendering materials like flannelette non-inflammable. The interest aroused by the subject is further increased by the fact that most of the fatal accidents occur to very young children, and apparently the number of such accidents is not diminishing.

Thanks must be given to the British Fire Prevention Committee for the efforts being made to investigate the subject in a thoroughly scientific manner, and for the report before us, which contains the results of experiments on 456 samples of cloth. These were divided into the five following groups:—(*a*) Flannelette ("non-flam," commercial); (*b*) flannelette ("non-flam," special); (*c*) flannelette (ordinary); (*d*) "union" (a mixture of cotton and wool); (*e*) flannel; (*f*) flannelette (fine finish). The method of testing employed was briefly as follows:—A yard of the cloth was suspended from three hooks fixed in a beam, the lower edge was kindled by the flame of a wax taper or spirit lamp. At the end of sixty seconds any flame was extinguished, and the portion of material burned carefully measured. In many cases photographs were taken before and after the ignition, and these supply more vivid illustrations of the results than the pages of statistics which follow. In some cases made-up garments were suspended on wire frames and tested as before. The different samples were also tested before and after repeated washings. Manifestly this is a point of great importance, and it was proved that in the case of "non-flam" materials there was practically no difference as regards fire resistance between samples washed once and those washed twenty times.

The general nature of the results may be briefly stated. Unquestionably the flannelette known as "non-flam" justifies its name. Samples of this material are only charred where they have been in contact with the flame; they are non-inflammable.

Ordinary flannelette as received from the manufacturer burned up through the centre of the sample,



(*a*) (*b*)

Demonstration Tests with Garments: (*a*) Flannelette ("Non Flam Commercial) at 120 seconds. (*b*) Flannelette (Ordinary) at 60 seconds.—From "Fire Tests with Textiles."

and from 25 to 40 per cent. of the material was consumed, while after *one washing* from 92 to 100 per cent. was destroyed. The material known as "union," a mixture of cotton and wool, as might be expected, is less inflammable than flannelette; from 57 to 66 per cent. of the material, after one washing, was burnt.

In the case of flannel the charring only reached as far as the power of the flame extended. Lastly, the flannelette (fine surface) is shown to be very like the ordinary, and in many cases the sample was completely consumed. This investigation appears to have been carefully conducted, and the report should be widely circulated. The illustrations explain themselves: (*a*) a "non-flam," made-up garment, after 120 seconds; (*b*) a made-up garment, ordinary flannelette, after 60 seconds.

[1] Fire Tests with Textiles. Flannelette known as "Non-Flam" Flannelette, Ordinary Flannelette, "Union" Flannelette submitted for test by Messrs. Whipp Bros. and Tod, Ltd., Manchester. The Committee's Report, pp. 48 ("Red Books" of the British Fire Prevention Committee, No. 148.) (London: The British Fire Prevention Committee, 1910.) Price 5s.